



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0511; Project Identifier AD-2022-00397-T; Amendment 39-22043; AD 2022-10-05]

RIN 2120-AA64

Airworthiness Directives; Gulfstream Aerospace Corporation Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2020-05-12, which applied to all Gulfstream Aerospace Corporation Model GVII-G500 and GVII-G600 airplanes. AD 2020-05-12 required revising the existing airplane flight manual (AFM) to incorporate revised limitations and procedures. This AD was prompted by reports of two landing incidents in which the alpha limiter engaged in the landing flare in unstable air, resulting in high rate of descent landings and damage to the airplanes. This AD retains certain requirements, and also adds and replaces certain AFM sections with more restrictive limitations and procedures. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of March 13, 2020 (85 FR 14562, March 13, 2020).

The FAA must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this final rule, contact Gulfstream Aerospace Corporation, Technical Publications Dept., P.O. Box 2206, Savannah, GA 31402-2206; telephone 800-810-4853; fax 912-965-3520; email pubs@gulfstream.com; Internet <http://www.gulfstream.com/customer-support>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0511.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0511; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The street address for the Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Sanford Proveaux, Aerospace Engineer, Certificate Management and Safety Oversight Section, FAA, Atlanta ACO

Branch, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5566; email: Sanford.Proveaux@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued AD 2020-05-12, Amendment 39-19860 (85 FR 14562, March 13, 2020) (AD 2020-05-12), for all Gulfstream Aerospace Corporation Model GVII-G500 and GVII-G600 airplanes. AD 2020-05-12 required revising the existing AFM to limit the maximum crosswind component for landing and increase the normal approach speeds, based on steady-state winds and wind gusts. AD 2020-05-12 was prompted by a report of a landing incident, which occurred on February 6, 2020, where the alpha (angle of attack) limiter engaged during the landing flare in unstable air, resulting in a high rate of descent landing and damage to the airplane. The FAA issued AD 2020-05-12 to address inappropriate alpha limiter engagement during the landing flare, which can limit pilot pitch authority during a critical phase of flight near the ground, and result in a high rate of descent landing with possible consequent loss of control of the airplane on landing.

Actions Since AD 2020-05-12 Was Issued

After the FAA issued AD 2020-05-12, a second landing event occurred on April 4, 2022. As in the first event, the alpha limiter engaged during the landing flare in unstable air, resulting in a high rate of descent landing and damage to the airplane. In both events, the angle of attack (AOA) protection function (alpha limiter) of the flight control computer (FCC) engaged and overrode the pilot pitch control inputs which the flight control law erroneously predicted would exceed the stall AOA. This resulted in a high rate of descent landing on the runway. Additionally, the pilots in both events had full aft-stick input when the aircraft contacted the runway, and the full-up pitch control did not arrest the high rate of descent landing.

The Model GVII-G500 and GVII-G600 alpha limiter function of the FCC is designed to prevent aerodynamic stalls and operates when airborne and operating in normal control law. The FCC uses many inputs including current AOA, rate of change of AOA, and pilot control stick inputs to determine alpha limiter activation. If the FCC predicts that critical AOA values will be exceeded, the FCC will activate the alpha limiting function. The FCC may activate the alpha limiting function when the AOA is not close to stall. Depending on the rate of AOA increase and pilot stick input, the alpha limiter may command nose down elevator to prevent a stall. It is clear from an analysis of both events that unintended alpha limiter engagement is primarily caused by rapid, large, and oscillating pilot control inputs near approach reference speeds, induced by unstable atmospheric conditions and gusty winds.

The aircraft level hazard is that inappropriate alpha limiter engagement during the landing flare, which can limit the pilot's ability to control pitch during a critical phase of flight near the ground, can result in a high rate of descent landing with possible consequent loss of control of the airplane on landing. It has been determined that the operating limitations mandated by AD 2020-05-12 are not adequate to prevent another occurrence. For these reasons, the AFM wind and gust operating limitations have been further restricted in this AD.

Pilot Adherence to AFM Revisions to Mitigate the Unsafe Condition of Unintended Alpha Limiter Engagement

These more restrictive operating limitations do not relieve a pilot from their other regulatory obligations, including verifying destination wind forecasts prior to departure, monitoring winds en route, verifying that the approach briefing includes a cockpit brief of winds and weather, and confirming that the winds are still within acceptable limits just prior to landing. Pilots are responsible for becoming familiar with this information when performing preflight actions under 14 CFR Part 91.103, 91.151, and 91.167. Furthermore,

these limitations can only be exceeded when the pilot is exercising their authority under 14 CFR Part 91.3.

FAA's Determination

The FAA is issuing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Related Service Information under 1 CFR Part 51

This AD retains certain requirements of AD 2020-05-12, which requires the following sections of Gulfstream GVII-G500 Airplane Flight Manual, GAC-AC-GVII-G500-OPS-0001, Revision 5, dated March 3, 2020, which the Director of the Federal Register approved for incorporation by reference as of March 13, 2020 (85 FR 14562, March 13, 2020).

- Section 01-27-10, "Normal Control Laws," of Chapter 01, "LIMITATIONS."
- Step 8., "Final Approach Fix," of Section 04-08-40, "One Engine Inoperative Landing Procedure," of Chapter 04, "EMERGENCY PROCEDURES."
- Step 11., "Landing," of Section 03-12-10, "Zero Flaps or Partial Flaps Landings," of Chapter 03, "ABNORMAL PROCEDURES."
- Step 15., "Approach Speed," of Section 01-03-40, "Airspeed Limitations," of Chapter 01, "LIMITATIONS."

This AD also requires the following sections of Gulfstream GVII-G600 Airplane Flight Manual, GAC-AC-GVII-G600-OPS-0001, Revision 3, dated March 3, 2020, which the Director of the Federal Register approved for incorporation by reference as of March 13, 2020 (85 FR 14562, March 13, 2020).

- Section 01-27-10, "Normal Control Laws," of Chapter 01, "LIMITATIONS."
- Steps 3. and 4. of Section 01-34-40, "Takeoff and Landing Data (TOLD)," of Chapter 01, "LIMITATIONS."

- Step 8., “Final Approach Fix,” of Section 04-08-40, “One Engine Inoperative Landing Procedure,” of Chapter 04, “EMERGENCY PROCEDURES.”

- Step 11., “Landing,” of Section 03-12-10, “Zero Flaps or Partial Flaps Landings,” of Chapter 03, “ABNORMAL PROCEDURES.”

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

AD Requirements

This AD retains some of the AFM revisions required by AD 2020-05-12, as listed under the Related Service Information under 1 CFR Part 51 section of this final rule.

For Model GVII-G500 airplanes, this AD also requires revising the following sections of the existing AFM to include more restrictive limitations and procedures.

- “Wind Conditions” of Section 01-02-10: “Runway, Slope, and Wind Conditions,” of Chapter 01, “LIMITATIONS.”

- “Day and Night, Visual and Instrument Flight Rules” of Section 01-03-10: “Types of Airplane Operations Permitted,” of Chapter 01, “LIMITATIONS.”

- “Approach Speed” of Section 01-03-40: “Airspeed Limitations,” of Chapter 01, “LIMITATIONS.”

- Section 01-22-10: “Autothrottle,” of Chapter 01, “LIMITATIONS.”

- “WARNING” information preceding “Approach/Landing Airspeeds” of Section 02-05-50: “Landing,” of Chapter 02, “NORMAL OPERATIONS.”

- “Introduction” and “Example” sections of Section 05-11-10: “Threshold Speeds” of Chapter 05, “PERFORMANCE.”

For Model GVII-G600 airplanes, this AD also requires adding or replacing the following sections of the existing AFM to include more restrictive limitations and procedures.

- “Wind Conditions” of Section 01-02-10: “Runway, Slope, and Wind Conditions,” of Chapter 01, “LIMITATIONS.”
- “Day and Night, Visual and Instrument Flight Rules” of Section 01-03-10: “Types of Airplane Operations Permitted,” of Chapter 01, “LIMITATIONS.”
- “Approach Speed” of Section 01-03-40: “Airspeed Limitations,” of Chapter 01, “LIMITATIONS.”
- Section 01-22-10: “Autothrottle,” of Chapter 01, “LIMITATIONS.”
- “WARNING” information preceding “Approach/Landing Airspeeds” of Section 02-05-50: “Landing,” of Chapter 02, “NORMAL OPERATIONS.”
- “Introduction” and “Example” sections of Section 05-11-10: “Threshold Speeds” of Chapter 05, “PERFORMANCE.”

Interim Action

The FAA considers this AD to be an interim action. The manufacturer is developing a modification that will address the unsafe condition identified in this AD. Once this modification is developed, approved, and available, the FAA might consider additional rulemaking.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has

found that the risk to the flying public justifies forgoing notice and comment prior to adoption of this rule because inappropriate alpha limiter engagement during the landing flare can limit pilot pitch authority during a critical phase of flight near the ground and could result in a high rate of descent landing with possible consequent loss of control of the airplane. Given the significance of the risk presented by this unsafe condition, it must be immediately addressed. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forgo notice and comment.

Comments Invited

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2022-0511 and Project Identifier AD-2022-00397-T” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C.

552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Sanford Proveaux, Aerospace Engineer, Certificate Management and Safety Oversight Section, FAA, Atlanta ACO Branch, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5566; email: Sanford.Proveaux@faa.gov. Any commentary that the FAA receives that is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA estimates that this AD affects 120 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
AFM revision	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$10,200

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866, and
- (2) Will not affect intrastate aviation in Alaska.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive (AD) 2020-05-12, Amendment 39-19860 (85 FR 14562, March 13, 2022); and

b. Adding the following new AD:

2022-10-05 Gulfstream Aerospace Corporation: Amendment 39-22043; Docket No. FAA-2022-0511; Project Identifier AD-2022-00397-T.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2020-05-12, Amendment 39-19860 (85 FR 14562, March 13, 2020) (AD 2020-05-12).

(c) Applicability

This AD applies to all Gulfstream Aerospace Corporation Model GVII-G500 and GVII-G600 airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 27, Flight controls.

(e) Unsafe Condition

This AD was prompted by reports of two landing incidents in which the alpha limiter engaged in the landing flare in unstable air, resulting in high rate of descent landings and damage to the airplanes. The FAA is issuing this AD to address inappropriate alpha limiter engagement during the landing flare, which can limit pilot

pitch authority during a critical phase of flight near the ground, and result in a high rate of descent landing with possible consequent loss of control of the airplane on landing.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Retained Requirements for Certain AFM Revisions for GVII-G500, with Revised Paragraph References

This introductory text to paragraph (g) restates the requirements of the introductory text to paragraph (g) of AD 2020-05-12, with revised paragraph references. For Model GVII-G500 airplanes: Within 5 days after March 13, 2020 (the effective date of AD 2020-05-12), revise the existing airplane flight manual (AFM) for your airplane to incorporate the information specified in paragraphs (g)(1) through (4) of this AD.

(1) This paragraph (g)(1) restates the information in paragraph (g)(3) of AD 2020-05-12, with no changes. Section 01-27-10, “Normal Control Laws,” of Chapter 01, “LIMITATIONS,” of the Gulfstream GVII-G500 Airplane Flight Manual, GAC-AC-GVII-G500-OPS-0001, Revision 5, dated March 3, 2020.

(2) This paragraph (g)(2) restates the information in paragraph (g)(4) of AD 2020-05-12, with no changes. Step 5. of Section 01-34-40, “Takeoff and Landing Data (TOLD),” of Chapter 01, “LIMITATIONS,” of the Gulfstream GVII-G500 Airplane Flight Manual, GAC-AC-GVII-G500-OPS-0001, Revision 5, dated March 3, 2020.

(3) This paragraph (g)(3) restates the information in paragraph (g)(6) of AD 2020-05-12, with no changes. Step 11. “Landing,” of Section 03-12-10, “Zero Flaps or Partial Flaps Landings,” of Chapter 03, “ABNORMAL PROCEDURES,” of the Gulfstream GVII-G500 Airplane Flight Manual, GAC-AC-GVII-G500-OPS-0001, Revision 5, dated March 3, 2020.

(4) This paragraph (g)(4) restates the information in paragraph (g)(7) of AD 2020-05-12, with no changes. Step 8. “Final Approach Fix,” of Section 04-08-40, “One Engine Inoperative Landing Procedure,” of Chapter 04, “EMERGENCY

PROCEDURES,” of the Gulfstream GVII-G500 Airplane Flight Manual,

GAC-AC-GVII-G500-OPS-0001, Revision 5, dated March 3, 2020.

(h) Retained Requirements for Certain AFM Revisions for GVII-G600, with Revised Paragraph References

This introductory text to paragraph (h) restates the requirements of the introductory text to paragraph (h) of AD 2020-05-12, with revised paragraph references. For Model GVII-G600 airplanes: Within 5 days after March 13, 2020 (the effective date of AD 2020-05-12), revise the existing AFM for your airplane to incorporate the information specified in paragraphs (h)(1) through (4) of this AD.

(1) This paragraph (h)(1) restates the information in paragraph (h)(3) of AD 2020-05-12, with no changes. Section 01-27-10, “Normal Control Laws,” of Chapter 01, “LIMITATIONS,” of the Gulfstream GVII-G600 Airplane Flight Manual, GAC-AC-GVII-G600-OPS-0001, Revision 3, dated March 3, 2020.

(2) This paragraph (h)(2) restates the information in paragraph (h)(4) of AD 2020-05-12, with no changes. Steps 3. and 4. of Section 01-34-40, “Takeoff and Landing Data (TOLD),” of Chapter 01, “LIMITATIONS,” of the Gulfstream GVII-G600 Airplane Flight Manual, GAC-AC-GVII-G600-OPS-0001, Revision 3, dated March 3, 2020.

(3) This paragraph (h)(3) restates the information in paragraph (h)(6) of AD 2020-05-12, with no changes. Step 11., “Landing,” of Section 03-12-10, “Zero Flaps or Partial Flaps Landings,” of Chapter 03, “ABNORMAL PROCEDURES,” of the Gulfstream GVII-G600 Airplane Flight Manual, GAC-AC-GVII-G600-OPS-0001, Revision 3, dated March 3, 2020.

(4) This paragraph (h)(4) restates the information in paragraph (h)(7) of AD 2020-05-12, with no changes. Step 8., “Final Approach Fix,” of Section 04-08-40, “One Engine Inoperative Landing Procedure,” of Chapter 04, “EMERGENCY PROCEDURES,” of the Gulfstream GVII-G600 Airplane Flight Manual, GAC-AC-GVII-G600-OPS-0001, Revision 3, dated March 3, 2020.

(i) New Requirements: AFM Revision for GVII-G500

For Model GVII-G500 airplanes: Within 3 days after the effective date of this AD, revise the existing AFM for your airplane as specified in paragraphs (i)(1) through (6) of this AD.

(1) Replace the information in “Wind Conditions” of Section 01-02-10: “Runway, Slope, and Wind Conditions,” of Chapter 01, “LIMITATIONS,” with the information in figure 1 to paragraph (i)(1) of this AD.

Figure 1 to paragraph (i)(1) – Section 01-02-10: Runway, Slope, and Wind Conditions

01-02-10: Runway, Slope, and Wind Conditions

3. Wind Conditions

- a. The maximum wind speed for landing (including gusts) is 15 knots.
- b. The maximum wind gust for landing is 5 knots.
- c. Maximum tailwind component approved for takeoff and landing: 10 knots
- d. When operating in a flight control law mode other than normal (i.e., alternate, direct, or backup), maximum crosswind component for landing: 10 knots
- e. Maximum tailwind component for landing with flaps 10° or less is zero knots.

(2) Replace the information in “Day and Night, Visual and Instrument Flight Rules” of Section 01-03-10: “Types of Airplane Operations Permitted,” of Chapter 01, “LIMITATIONS,” with the information in figure 2 to paragraph (i)(2) of this AD.

Figure 2 to paragraph (i)(2) – Section 01-03-10: Types of Airplane Operations Permitted

01-03-10: Types of Airplane Operations Permitted

2. Day and Night, Visual and Instrument Flight Rules

- a. All approaches must be stabilized by 1000 ft AGL, including visual maneuvers.
- b. Vertical guidance from an ILS or FMS-based approach is required for night landings.

(3) Replace the information in “Approach Speed” of Section 01-03-40: “Airspeed Limitations,” of Chapter 01, “LIMITATIONS,” with the information in figure 3 to paragraph (i)(3) of this AD.

Figure 3 to paragraph (i)(3) – Section 01-03-40: Airspeed Limitations

01-03-40: Airspeed Limitations

15. Approach Speed

- a. Approach speed additives (Flaps 39) are half the steady state wind plus the gust increment up to a maximum additive of 20 knots.
- b. Minimum approach speed during normal operations is $V_{REF} + 10$ knots, unless otherwise specified in a non-normal procedure.
- c. Approach Speed shall be maintained to the runway threshold and shall be used to determine landing performance except for abnormal flap approaches. Abnormal flap approaches must comply with the procedures in section 03-12-10: Zero Flaps or Partial Flaps Landings.

(4) To Section 01-22-10: “Autothrottle,” of Chapter 01, “LIMITATIONS,” add the information in figure 4 to paragraph (i)(4) of this AD.

Figure 4 to paragraph (i)(4) – Section 01-22-10: Autothrottle

01-22-10: Autothrottle

2. Use of the Autothrottle for approach and landing is required during normal operations.

Note

Pilot will physically guard the throttles until touchdown, and override or disconnect the autothrottle if performance is not as expected.

(5) Replace the “WARNING” information preceding “Approach/Landing Airspeeds” of Section 02-05-50: “Landing,” of Chapter 02, “NORMAL OPERATIONS,” with the information in figure 5 to paragraph (i)(5) of this AD.

Figure 5 to paragraph (i)(5) – Section 02-05-50: Landing

02-05-50: Landing	
<div>WARNING</div> <p>EXCEPT AS REQUIRED IN AN EMERGENCY OR AS DIRECTED BY A NON-NORMAL PROCEDURE, MINIMUM APPROACH SPEED IS $V_{REF} + 10$. APPROACH SPEED SHALL BE MAINTAINED TO THE THRESHOLD AND SHALL BE USED TO DETERMINE LANDING DISTANCE.</p>	
4.	Approach/Landing Airspeeds Verify

(6) Replace the “Introduction” and “Examples” sections of Section 05-11-10: “Threshold Speeds” of Chapter 05, “PERFORMANCE,” with the information in figure 6 to paragraph (i)(6) of this AD.

Figure 6 to paragraph (i)(6) – Section 05-11-10: Threshold Speeds

05-11-10: Threshold Speeds

Introduction

1. Threshold speeds, V_{REF} , for landing distance are shown for normal flap setting 39° in Figure 1. Threshold Speed for Landing Distance, Flaps 39°, Wing Anti-Ice OFF And ON for Wing Anti-Ice OFF and ON operations. Abnormal flap settings 20° and 10° threshold speeds for Wing Anti-Ice OFF and ON conditions are shown in Figure 2. Threshold Speed for Landing Distance, Flaps 20°, Wing Anti-Ice OFF And ON and Figure 3. Threshold Speed for Landing Distance, Flaps 10°, Wing Anti-Ice OFF And ON. For the abnormal flap setting 0°, threshold speeds shown in Figure 4. Threshold Speed for Landing Distance, Flaps 0°, Wing Anti-Ice ON are effective for Wing Anti-Ice ON operations.
2. Normally, landings will be conducted only at the landing flap setting of 39°. Additional charts are provided for reduced flap settings to be used when an abnormal landing at a reduced flap setting is required. The landing threshold speeds shown are effective throughout the certified weight, temperature and altitude range of the airplane.

WARNING

EXCEPT AS REQUIRED IN AN EMERGENCY OR AS DIRECTED BY A NON-NORMAL PROCEDURE, MINIMUM APPROACH SPEED IS $V_{REF} + 10$. APPROACH SPEED SHALL BE MAINTAINED TO THE THRESHOLD AND SHALL BE USED TO DETERMINE LANDING DISTANCE.

CAUTION

TIRESPEED LIMITATIONS WILL BE EXCEEDED IF TOUCHDOWN IS MADE IN EXCESS OF 195 KNOTS GROUND SPEED.

Note

Landing distance in 05-11-30: Landing Distance and maximum landing weight 05-11-20: Tire Speed and BKE Limited Maximum Landing Weight shall be calculated utilizing planned speed at the threshold.

Examples

1. Determine the final approach and threshold speeds for landing at a normal flap (39°) setting.
 - a. **Given:**
 - Landing Gross Weight = 58,000 pounds (26,308 kg)
 - Airport Pressure Altitude = 2000 feet
 - b. **Solution:**
 - Threshold Speed (V_{REF}) = 125 KIAS
 - Final Approach Speed ($V_{REF} + 10$ KIAS) = 135 KIAS

(j) New Requirements: AFM Revision for GVII-G600

For Model GVII-G600 airplanes: Within 3 days after the effective date of this AD, revise the existing AFM for your airplane as specified in paragraphs (j)(1) through (6) of this AD.

(1) Replace the information in “Wind Conditions” of Section 01-02-10: “Runway, Slope, and Wind Conditions,” of Chapter 01, “LIMITATIONS,” with the information in figure 7 to paragraph (j)(1) of this AD.

Figure 7 to paragraph (j)(1) – Section 01-02-10: Runway, Slope, and Wind Conditions

01-02-10: Runway, Slope, and Wind Conditions

3. Wind Conditions

- a. The maximum wind speed for landing (including gusts) is 15 knots.
- b. The maximum wind gust for landing is 5 knots.
- c. Maximum tailwind component approved for takeoff and landing: 10 knots
- d. When operating in a flight control law mode other than normal (i.e., alternate, direct, or backup), maximum crosswind component for landing: 10 knots
- e. Maximum tailwind component for landing with flaps 10° or less is zero knots.

(2) Replace the information in “Day and Night, Visual and Instrument Flight Rules” of Section 01-03-10: “Types of Airplane Operations Permitted,” of Chapter 01, “LIMITATIONS,” with the information in figure 8 to paragraph (j)(2) of this AD.

Figure 8 to paragraph (j)(2) – Section 01-03-10: Types of Airplane Operations Permitted

01-03-10: Types of Airplane Operations Permitted

2. Day and Night, Visual and Instrument Flight Rules

- a. All approaches must be stabilized by 1000 ft AGL, including visual maneuvers.
- b. Vertical guidance from an ILS or FMS-based approach is required for night landings.

(3) Replace the information in “Approach Speed” of Section 01-03-40: “Airspeed Limitations,” of Chapter 01, “LIMITATIONS,” with the information in figure 9 to paragraph (j)(3) of this AD.

Figure 9 to paragraph (j)(3) – Section 01-03-40: Airspeed Limitations

01-03-40: Airspeed Limitations

15. Approach Speed

- a. Approach speed additives (Flaps 39) are half the steady state wind plus the gust increment up to a maximum additive of 20 knots.
- b. Minimum approach speed during normal operations is $V_{REF} + 10$ knots, unless otherwise specified in a non-normal procedure.
- c. Approach Speed shall be maintained to the runway threshold and shall be used to determine landing performance except for abnormal flap approaches. Abnormal flap approaches must comply with the procedures in section 03-12-10: Zero Flaps or Partial Flaps Landings.

(4) To Section 01-22-10: “Autothrottle,” of Chapter 01, “LIMITATIONS,” add the information in figure 10 to paragraph (j)(4) of this AD.

Figure 10 to paragraph (j)(4) – Section 01-22-10: Autothrottle

01-22-10: Autothrottle

- 2. Use of the Autothrottle for approach and landing is required during normal operations.

Note

Pilot will physically guard the throttles until touchdown, and override or disconnect the autothrottle if performance is not as expected.

(5) Replace the “WARNING” information preceding “Approach/Landing Airspeeds” of Section 02-05-50: “Landing,” of Chapter 02, “NORMAL OPERATIONS,” with the information in figure 11 to paragraph (j)(5) of this AD.

Figure 11 to paragraph (j)(5) – Section 02-05-50: Landing

02-05-50: Landing	
<div>WARNING</div> <p>EXCEPT AS REQUIRED IN AN EMERGENCY OR AS DIRECTED BY A NON-NORMAL PROCEDURE, MINIMUM APPROACH SPEED IS $V_{REF} + 10$. APPROACH SPEED SHALL BE MAINTAINED TO THE THRESHOLD AND SHALL BE USED TO DETERMINE LANDING DISTANCE.</p>	
4. Approach/Landing Airspeeds	Verify

(6) Replace the “Introduction” and “Examples” sections of Section 05-11-10: “Threshold Speeds” of Chapter 05, “PERFORMANCE,” with the information in figure 12 to paragraph (j)(6) of this AD.

05-11-10: Threshold Speeds

Introduction

1. Threshold speeds, V_{REF} , for landing distance are shown for normal flap setting 39° in Figure 1. Threshold Speed for Landing Distance, Flaps 39°, Wing Anti-Ice OFF And ON for Wing Anti-Ice OFF and ON operations. Abnormal flap settings 20° and 10° threshold speeds for Wing Anti-Ice OFF and ON conditions are shown in Figure 2. Threshold Speed for Landing Distance, Flaps 20°, Wing Anti-Ice OFF And ON and Figure 3. Threshold Speed for Landing Distance, Flaps 10°, Wing Anti-Ice OFF And ON. For the abnormal flap setting 0°, threshold speeds shown in Figure 4. Threshold Speed for Landing Distance, Flaps 0°, Wing Anti-Ice ON are effective for Wing Anti-Ice ON operations.
2. Normally, landings will be conducted only at the landing flap setting of 39°. Additional charts are provided for reduced flap settings to be used when an abnormal landing at a reduced flap setting is required. The landing threshold speeds shown are effective throughout the certified weight, temperature and altitude range of the airplane.

WARNING

EXCEPT AS REQUIRED IN AN EMERGENCY OR AS DIRECTED BY A NON-NORMAL PROCEDURE, MINIMUM APPROACH SPEED IS $V_{REF} + 10$. APPROACH SPEED SHALL BE MAINTAINED TO THE THRESHOLD AND SHALL BE USED TO DETERMINE LANDING DISTANCE.

CAUTION

TIRESPEED LIMITATIONS WILL BE EXCEEDED IF TOUCHDOWN IS MADE IN EXCESS OF 195 KNOTS GROUND SPEED.

NOTE

Landing distance in 05-11-30: Landing Distance and maximum landing weight 05-11-20: Tire Speed and BKE Limited Maximum Landing Weight shall be calculated utilizing planned speed at the threshold.

Examples

Determine the final approach and threshold speeds for landing at a normal flap (39°) setting.

Given:

- Landing Gross Weight = 58,000 pounds (26,308 kg)
- Airport Pressure Altitude = 2000 feet

Solution:

- Threshold Speed (V_{REF}) = 111 KIAS
- Final Approach Speed ($V_{REF} + 10$ KIAS) = 121 KIAS

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Atlanta ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (l) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) AMOC 7A0-22-06968, dated April 29, 2022, was approved as an AMOC for the requirements for AD 2020-05-12, and is approved as an AMOC for the requirements of paragraphs (g) and (h) of this AD. Other AMOCs previously issued for the requirements of AD 2020-05-12 are not approved as an AMOC for the requirements of this AD.

(l) Related Information

For more information about this AD, contact Sanford Proveaux, Aerospace Engineer, Certificate Management and Safety Oversight Section, FAA, Atlanta ACO Branch, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5566; email: Sanford.Proveaux@faa.gov.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(3) The following service information was approved for IBR on March 13, 2020 (85 FR 14562, March 13, 2020).

(i) Gulfstream GVII-G500 Airplane Flight Manual,
GAC-AC-GVII-G500-OPS-0001, Revision 5, dated March 3, 2020.

(A) Section 01-27-10, "Normal Control Laws," of Chapter 01, "LIMITATIONS."

(B) Step 8., "Final Approach Fix," of Section 04-08-40, "One Engine Inoperative Landing Procedure," of Chapter 04, "EMERGENCY PROCEDURES."

(C) Step 11., "Landing," of Section 03-12-10, "Zero Flaps or Partial Flaps Landings," of Chapter 03, "ABNORMAL PROCEDURES."

(D) Step 15., "Approach Speed," of Section 01-03-40, "Airspeed Limitations," of Chapter 01, "LIMITATIONS."

(ii) Gulfstream GVII-G600 Airplane Flight Manual,
GAC-AC-GVII-G600-OPS-0001, Revision 3, dated March 3, 2020.

(A) Section 01-27-10, "Normal Control Laws," of Chapter 01, "LIMITATIONS."

(B) Steps 3. and 4. of Section 01-34-40, "Takeoff and Landing Data (TOLD)," of Chapter 01, "LIMITATIONS."

(C) Step 8., "Final Approach Fix," of Section 04-08-40, "One Engine Inoperative Landing Procedure," of Chapter 04, "EMERGENCY PROCEDURES."

(D) Step 11., "Landing," of Section 03-12-10, "Zero Flaps or Partial Flaps Landings," of Chapter 03, "ABNORMAL PROCEDURES."

(4) For service information identified in this AD, contact Gulfstream Aerospace Corporation, Technical Publications Dept., P.O. Box 2206, Savannah, GA 31402-2206; telephone 800-810-4853; fax 912-965-3520; email pubs@gulfstream.com; Internet <http://www.gulfstream.com/customer-support>.

(5) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(6) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fr.inspection@nara.gov, or go to <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on May 2, 2022.

Ross Landes, Deputy Director for Regulatory Operations,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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